

# **Abstract of Japanese Patent Office Gazette**

No. S63-067762

## **LEAD FRAME FOR RESIN SEALED SEMICONDUCTOR DEVICE**

Inventor: Hamano Seiji

Applicant: Fujitsu Ltd.

Filed: Sept. 9, 1986

Disclosed: Mar. 26, 1988

**EMBODIMENT:** Fig.4 shows a cross sectional side view of a lead frame for a resin sealed semiconductor device wherein an integrated circuited semiconductor chip 6 is fixed (chip bonded) to a chip pad 2, connected (wire bonded) to the tip of an inner lead 3 with a wire 7, and sealed (resin formed) with a sealing resin 8. After resin forming, an exposed surface of the lead frame is plated, unnecessary portions such as tie bar 5 and peripheries of a metal stripe 1 are trimmed, and an outer lead 4 is formed into a given shape.

Since the sealing resin 8 seals inside from the inner lead 3, the semiconductor device is protected from ambient circumstances.

In the above semiconductor device employing lead frame, however, the surface of the inner lead 3 is smooth so that the stress due to the difference between the thermal expansion coefficient of the inner lead 3 and that of the sealing resin 8 may cause slippage and lift off. Lift off allows invasion of moisture from outside which would make the device less moisture proof and less reliable.

Fig.5 shows a portion 3a of an improved inner lead 3 with a curve 9a and a notch 9b, which may overcome the above problem. Curves 9a and notches 9b are engaged with sealing resin 8 to improve adhesion strength between inner leads 3 and sealing resin 8 and avoid slippage at the adhering part between them.

However making curves 9a and notches 9b requires complex equipments for manufacturing lead frames such as press dies, which will increase implementation difficulty and increase manufacturing cost. So the invention provides a lead frame for a resin sealed semiconductor device characterized in that a surface 10 in contact with a sealing resin 8 is roughly processed. (See Fig.2.)